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BEFORE THE BOARD OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES, STATE OF UTAH

IN THE MATTER OF THE REQUEST FOR AGENCY ACTION BY PETITIONERS NORTH EMERY WATER USERS ASSOCIATION, HUNTINGTON-CLEVELAND IRRIGATION COMPANY, and CASTLE VALLEY SPECIAL SERVICES DISTRICT	**CLOSING ARGUMENT** Docket No. 94-027 Cause No. ACT/015/025-93B

C.W. Mining Company (Co-op)respectfully submits its Closing Argument pursuant to the Board's order at the close of the hearing in this matter on November 17, 1994.

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STATEMENT OF THE ISSUE.

Petitioners seek review under R645-300-211 of a Significant Revision to CWM's permit to allow mining the Tank seam. Petitioners ask the Board to reverse or modify DOGM's approval of the Significant Revision. [Request for Agency Action p.2,3] R645-300-211 provides:

> Within 30 days after an applicant or permittee is notified of the decision of the Division concerning ... a permit change, ... any person with an interest which is or may be adversely affected may request a hearing on the reasons for the decision ....

Petitioners are only entitled to a hearing on the reason for DOGM's decision to approve the Significant Revision. Petitioners did not request a NOV or other agency action based on CWM's past mining activity. Petitioners did not request, are not entitled to, and did not receive a hearing on whether to approve or modify CWM's existing permit.[1] Under R645-300-211 and the relief Petitioners request in their Request for Agency Action, the only question is whether CWM satisfied the requirements for approving the Significant Revision to permit mining the Tank seam.

R645-300-133.400 requires DOGM to determine that "the proposed operation has been designed to prevent material damage to hydrologic balance outside the permit area ...." Petitioners' sole concern relating to hydrology is the impact on Big Bear and Birch Springs. The Significant Revision to mine the Tank Seam has been designed to prevent material damage to the hydrologic balance of Big Bear and Birch Springs. There will be no material damage to the springs, because there is no water at the Tank seam; there is no significant risk of contamination; and the Springs are hydrologically isolated from the permit area.

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[1] If Petitioners had requested action on CWM's existing permit, Petitioners would have had the burden of proof. R645-303-233.200. Petitioners's evidence would not satisfy that burden.

ARGUMENT

I. THERE IS NO WATER AT THE TANK SEAM.

Petitioners admit the single most important fact supporting DOGM's approval of the Significant Revision:

THERE IS NO WATER AT THE TANK SEAM.

With no water in the area of the Tank seam there is no hydrology to be impacted. This conclusion is amply supported by the evidence, all of which is unrebutted:

- Test holes drilled up from the Blind Canyon seam through 250 feet of solid rock show no water above the Tank Seam and very little if any water between the two coal seams.
- The just-completed borehole from the Tank seam elevation to the Blind Canyon seam, 8 feet in diameter and 250 feet deep, is completely dry throughout its length.
- There are no springs or seepages from fractures and faults which intersect the surface near and above the Tank seam.
- The access road cut into the mountainside up to the Tank seam is dry, with no springs or seepage anywhere along its entire length.
- The highest water table in the permit area is well below Blind Canyon seam even at the northernmost boundary, and more than 250 feet below the Tank seam. [Ex.D p.4-8]
- Topographic maps of the area [Ex.1,6; Ex.D Fig.1-1,2-3] show the top surface of the permit area is a virtual "knife edge" with no flat surfaces to catch and retain precipitation. This topography results in almost all precipitation running off immediately, with little or no water left to soak into the ground and recharge aquifers.
- Even Petitioner's evidence [Ex. 7] shows several layers of impermeable shale, siltstone or mudstone in the formations above the Tank seam.

The fact no water exists at, above or near the Tank seam elevation makes it extremely unlikely mining the Tank seam will have any significant impact on Big Bear or Birch Springs.

II. THERE IS NO SIGNIFICANT RISK OF CONTAMINATION.

Petitioners' concern about contamination is unfounded. No evidence suggests mining the Tank seam would contaminate Big Bear or Birch Springs. Petitioners did not describe any sources of contamination, or even so much as infer what type of materials they were concerned about as potential contaminants. There are no potential contaminants other than those inherent in any underground mining activity. No contaminants are to be stored underground. There is no source of contaminants.

There is no water in the Tank seam area. Without water as a vehicle, even in the unlikely event contaminants were somehow released into the Tank seam they could not move through a mile or more of solid rock to the springs.

Any risk of contamination from mining the Tank seam is less than that from CWM's past mining. Except for one unexplained anomaly in 1991, Petitioners' evidence shows the water quality at Big Bear Spring has been consistent from 1971 to the present. Darrel Leamaster testified UDOT widened the highway and worked on Petitioners' water transmission lines at the time the anomoly occurred. Mr. Leamaster admitted the water quality was good even considering the anomaly. Even if that anomaly resulted from mining activity, the most extreme variation was still within acceptable levels of water quality. Petitioners have not even suggested CWM's mining activity has ever impacted the quality of water from Birch Spring.

Water pumped from the Blind Canyon seam, after being "contaminated" by CWM's mining activity, is still more pure than water from Birch and Big Bear Springs, as the following information illustrates (summarized from Ex.18 and Ex.D):

	Mine Water	Birch Spring	Big Bear Spring (excluding anomaly)
pH	6.1 - 8.1	8.0 - 8.33	6.1 - 8.34
Conductivity	300 - 842	748 - 1,090	360-1,100
TDS	285 - 338	412 - 810	289 - 382
Sulfate	33 - 128	102 - 298.34	25 - 72
Calcium	38.9 - 51.9	87 - 128.01	66 - 106.3
Magnesium	20.1 - 29.5	42.5 - 71.82	
Bicarbonate	110 - 340	376 - 392	
Chloride	4.2 - 4.9	7 - 8.17	
Sodium	8.8 - 15.2	6.1 - 10.8	
Iron	.220 - .505	<0.05 - .21	

[Ex.18; Ex. D p.2-25,31-34,39]

The evidence compels the inescapable conclusion that CWM's mining does not contaminate the groundwater, that Big Bear and Birch Springs have never been contaminated, and that there is no significant risk of their contamination by mining the Tank seam.

III. BIG BEAR SPRING IS HYDROLOGICALLY ISOLATED FROM THE PERMIT AREA.

As already shown, allowing CWM to mine the Tank seam will not adversely impact Big Bear Spring because there is no water in the Tank seam area to be impacted, and no new contaminants to be introduced into the groundwater. Equally important, there will be no impact because Big Bear Spring is hydrologically isolated from the permit area.

Tritium dating shows Big Bear water is "new" water, while water encountered in mining operations is "old" water (pre 1950's open air atomic tests). This is possible only if the mine water and Big Bear Springs are isolated.

Chemical analysis also shows Big Bear water is chemically dissimilar from mine water. *See* Point II above -- calcium concentrations are higher, while sulfate concentrations are lower.

Petitioners admit there are three water tables in the permit area, not one, each separated from the others by layers of impermeable shale (the Mancos Tongues). Big Bear Spring flows from the bottom water table. Richard White testified the shale in the Mancos Tongues is plastic, that is, it flows slightly under pressure to seal any internal fractures. Even if fractures exist within the other formations in the permit area, those fractures seal and become impermeable in the Mancos Tongues. Bryce Montgomery testified that if the three water levels were not connected by faults, water from the two upper water tables would appear at the cliff faces. That is exactly what happens. Water from the two water tables above the Mancos Tongues does not flow downward into the water table feeding Big Bear Springs, but flows slowly in a horizontal direction to the cliff surface where it evaporates. [Ex. D p.2-22, efflorescence on sandstone outcrops shows slow groundwater movement; water evaporates on contact with the atmosphere.]

Water encountered by CWM during its past mining operations is "perched" water, isolated from any regional aquifer. As CWM mined to the north water would drain from roof bolt holes, then decrease and eventually stop. If the mine water was from the water table it would come up from the mine floor, and would not decrease over time. Slug test data from wells drilled in the mine confirm the uppermost water table is well below the Blind Canyon seam. [Ex. D p.4-8]

If Big Bear Spring was not hydrologically isolated from the permit area, water would have to: (a) enter the ground within the permit area, (b) flow through hundreds of feet of solid rock, (c) flow through proven tables of "old" water (existing before 1950's open air atomic tests), (d) flow through at least two impermeable layers of shale, then (e) appear in Big Bear Spring as "new" water," never having mixed with the "old" water from the water tables above. Any likelihood of this being the case is so small as to be negligible. Because Big Bear Spring is hydrologically isolated from the permit area, mining the Tank seam will not adversely impact the spring.

IV. BIRCH SPRING IS HYDROLOGICALLY ISOLATED FROM THE PERMIT AREA.

Birch Spring is hydrologically isolated from the permit area. Chemical analysis shows Birch Spring water is chemically dissimilar from mine water. *See* Point II above. Birch Spring water has twice the TDS content as does the Blind Canyon seam, and is considerably more alkaline. Increased sulfer would decrease alkalinity, yet sulfate levels are three times higher in Birch Spring than in mine water; iron concentrations are three times lower. Sodium concentrations are substantially less, while calcium, magnesium, bicarbonate and chloride levels are substantially greater. These variations cannot be explained by theorizing additional chemicals are dissolved en route from the permit area to Birch Spring. There are two isolated sources of water, not one.

Blind Canyon Fault is a major fault with a 200 foot shift at the west boundary of the permit area. It intersects the surface 800 feet east of Birch Spring. If the fault is plugged, it would be an impermeable barrier isolating Birch Spring from the permit area. If the fault is not plugged, it would divert water away from Birch Spring and form another spring where it meets the surface. No such spring exists. In either case, Blind Canyon Fault physically isolates Birch Spring from any mining activity in the permit area.

For the same reasons stated in Point III above, three separate water tables separated by the Mancos Tongues isolate Birch Spring from the permit area.

Petitioners have not offered any evidence of substance, and CWM is aware of none, establishing a hydrologic connection between Birch Spring and the permit area. There is no connection within the permit area. Mining the Tank seam will not impact Birch Spring.

V. CWM'S APPLICATION COMPLIES WITH THE REGULATIONS.

Daron Haddock, permit supervisor for DOGM, signed the Significant Permit Revision Approval [Ex.A] Mr. Haddock testified that the statements in the Approval were true. In particular he testified CWM's application is complete and accurate, and CWM complied with all the requirements of the State Program. He testified the proposed operation of mining the Tank seam has been designed to prevent material damage to the hydrologic balance outside the permit area. He testified DOGM made an assessment of the probable cumulative impacts of all anticipated coal mining and reclamation operations on the hydrologic balance in the cumulative impact area and has determined that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

Mr. Haddock's testimony was unrebutted. Petitioners challenged Mr. Haddock on only one point -- whether the baseline information on Big Bear and Birch Springs required by R645-301-724.100 was found in Exhibit C. Mr. Haddock confirmed that, although he was not familiar with Exhibit C, he knew CWM's Application did contain the baseline data.[2]

Petitioners argue an unspecified future event may have some unknown impact on Big Bear Spring or Birch Spring. No one has a crystal ball, and the Regulations do not require a specific contingency plan for every possible future event. R645-301-731.800 provides for the relief Petitioners seek, that CWM replace the water supplier of an affected owner "where the water supply has been adversely impacted by contamination, diminution, or interruption proximately resulting from the surface mining activities." Mr. Reynolds testified the Application incorporated this requirement. Petitioners' arguments based on the 1992 revision to SMCRA are irrelevant.

The Regulations do not require CWM to prove that Big Bear and Birch Springs will be completely unaffected by any possible scenario. There is no requirement even for information on water availability and alternative water sources unless DOGM finds that mining the Tank seam would cause contamination, diminution, or interruption of the springs. The evidence does not support such a showing, and DOGM determined such effects were unlikely.

VI. BRYCE MONTGOMERY'S TESTIMONY IS INCONSISTENT.

Petitioners' claims turn largely on the credibility of their expert witness, Bryce Montgomery. His credibility is definitely at issue, and is impeached by his own testimony.

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[2] CWM's full Application is quite lengthy, and only excerpts were used in evidence at the Board hearing. The entire Application is part of the record. The baseline data is in Section 7 of the main text of the Application.

Mr. Montgomery testified Birch Spring was "immediately adjacent" to CWM's mining operation, although the maps prove it is some 800 feet west of the permit area.

Mr. Montgomery prepared a diagram (Exhibit 9) he claimed accurately portrayed the permit area, but later was compelled to admit he completely ignored Blind Canyon Fault, which separates the permit area from all areas to the west, including Birch Spring. That fault, which Mr Montgomery pretends doesn't even exist, hydrologically isolates Birch Spring from the permit area.

Mr. Montgomery argued mining the Tank seam would divert water from the springs, but then was compelled to admit there was no water at or above the Tank seam, that the Tank seam is above the water table and does not intercept the regional aquifer.

Mr Montgomery told the board 500 gpm of water was being pumped from the current mining operation, when he knew the flow had decreased to about 200 gpm and is still declining.

Mr Montgomery argued variations in the water flow at the springs are directly correlated to precipitation and mining events scant months earlier. His own Exhibit 15 proves no such correlation exists. There is insufficient data to conclude whether spring flow lags precipitation by two years, or five, or ten, or whether there is any correlation other than the obvious -- that spring flow in general decreases gradually in times of drought such as the past decade.

Mr. Montgomery also admitted underground water flow in the permit area is extremely slow, on the order of 1/10 foot per day, or 365 feet in ten years. Earthfax slug tests [Ex. C p. 2-8] show groundwater velocities are actually much slower, as low as 1.31 feet per year, which would take over 4,000 years to travel a single mile. The permit area in general is 1/2 mile to 2 miles from the springs. Birch Spring is some 8,500 feet, or 1.6 miles, from the North Mains section of the mine. At the measured velocities any water from the Tank seam area would take from over 120 years to well over 1,000 years to reach the area of the springs, even if there was a hydrological

connection. These numbers are consistent with Earthfax's tritium dating of mine water and Big Bear water, and inconsistent with Petitioners' theories. Any relationship between mining activity and water flow at the springs is coincidental.

Mr. Montgomery claimed mining the Tank seam would compact the mine floor, sealing off all fractures and creating an impermeable barrier. He then claimed unidentified contaminants would penetrate this impenetrable barrier, and flow through over a mile of solid rock into the springs. He can't have it both ways; one of his statements has to be false. Actually, both are.

Mr. Montgomery admitted the existence of the "Mancos Tongues" and unsaturated water tables between the coal seams and the regional aquifer. He also admitted if the three water tables were not connected, water would come out the sandstone cliff faces. Mr. Mangum and Mr. Reynolds, as well as Earthfax' report [Ex. D p.2-22, efflorescence on sandstone outcrops] proved that is exactly what happens. The water from the water tables seeps out along the surface throughout the area, and evaporates on contact with the atmosphere. This is consistent with a finding the water tables are hydrologically isolated, and inconsistent with Petitioners' theories.

Mr. Montgomery opined that current mining operation intercepted the water table, but admitted if it did the water pressure from below would increase as CWM mined to the north. Earthfax tests prove the water pressure did not increase, but actually decreased as CWM mined to the north. [Ex. D p.4-8] At well DH-2 the static water level is 160 feet below Blind Canyon seam, which would be nearly 400 feet below the Tank seam.

Mr. Montgomery represented that CWM's Application provided for a sloped ramp inside the mountain connecting the Tank Seam with the Blind Canyon seam, which would be a permanent conduit for contaminants into the aquifer. He knew this was not true. Instead, there is a vertical borehole from the surface at the Tank seam elevation. The borehole is dry its entire length.

Mr. Montgomery testified of a single "anomalous hump" or increase in the water flow from Big Bear Spring several years past, accompanied by a rise in the water's calcium level. He argued the variation may have resulted from water released by CWM's mining activity in Blind Canyon seam. However, chemical tests show water pumped from the Blind Canyon seam is lower in calcium than water from Big Bear spring. If the change in Big Bear spring was caused by CWM's mining activity, the spring's calcium levels would have gone down, not up. Although CWM has mined continuously for many years both preceeding and following the anomoly, there has been no other significant variation in the Big Bear Spring's water quality. There has never been an observed variation in Birch Spring's water quality.

Mr. Montgomery relied primarily on old U.S. Geologic Survey publications which describe the area only in general terms and contain no site specific information. Earthfax, DOGM and the Regulations themselves (*see* R645-301-700 *et seq.* generally) find that kind of generalized information wholly inadequate to resolve the issue at hand. CWM retained Earthfax to do extensive (and expensive) testing of the site-specific conditions precisely because the USGS publications are not specific and detailed enough to draw any conclusions as to the impact of mining the Tank seam. All required site-specific data is in CWM's Significant Revision application, and DOGM after close scrutiny found the data adequate to conclude no significant hydrologic impact would result from mining the Tank seam. Mr. Montgomery had complete access to all site specific data, but intentionally ignored it because it completely refutes the opinions Petitioners hired him for.

These inconsistencies demonstrate Mr. Montgomery first formed opinions to support Petitioners' desired outcome, then interpreted (or disregarded) the facts as necessary to support his opinions. His opinions are contrary to the clear weight of the evidence and should be disregarded.

CONCLUSION

The evidence overwhelmingly establishes there will be no material adverse impact on Big Bear and Birch Spring as a result of allowing CWM to mine the Tank Seam. CWM moved to exclude evidence based on collateral estoppel and relevance. Although Petitioners claimed they would tie in the relevance of Mr. Montgomery's testimony to the Tank seam, they never did. After excluding all irrelevant evidence, nothing is left of Petitioners' case.

CWM met its burden of showing the Significant Revision is designed to prevent material damage to the hydrological balance outside the permit area. The Board should affirm DOGM's decision, and approve CWM's application for a significant revision to its permit.

CWM also asks the Board to order that Petitioners are precluded from raising the same fact issues again in any future proceeding, based on collateral estoppel and relevance.

DATED this 17 day of December, 1994.

Mark Hansen
Attorney for Respondent

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all parties of record in this proceeding by mailing a copy thereof, properly addressed, with postage prepaid, to:

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Dated at Salt Lake City, Utah this 19 day of December, 1994.

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